Portable Ultrasonic Energy meter

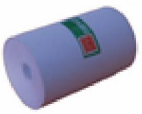
Type：TUC-2000E

Main Features:

Features	Description
High Accuracy measuring	Linearity: better than 0.5%, Repeatability: better than 0.2%, Accuracy: better than ±1%
Non-intrusive measuring	Non-intrusive, clamp-on transducer, no pressure drop, no pipe disturbance.
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
Chinese & English menu	Chinese & English display, easy to operate.
Large capacity battery	Built-in rechargeable Ni-MH rechargeable battery, provide over 20 hours of continuous operation
Built-in printer	Built-in mini thermal printer with instant and timing print function
Built-in data logger	Uplink over 20 measuring data to computer or internet

Model Selection:

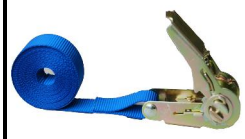
Standard configuration:

Main Unit Volume:225X180X67	Medium transducer TM-1	Ultrasonic signal Cable	Power cord	Carrying case
				
Stretcher	Tape ruler	Thermal print paper	User Manual	Ultrasonic coupling agent
Temperature Transducer	Steel belt			

Optional Transducer:

Small size transducer TS-2(Magnetic) DN15～DN100mm -40℃～110℃	Medium size transducer TM-1(Magnetic) DN50～DN1000mm -40℃～110℃	Large size transducer TL-1(Magnetic) DN300～DN6000mm -40℃～110℃
High-temperature small size transducer HTS-1 DN15～DN100mm -40℃～160℃	High-temperature medium size transducer HTM-1 DN50～DN1000mm -40℃～160℃	

Other optional configuration

			
Ultrasonic thickness meter	lengthen signal cable	Lengthen stretcher	Thermal print paper

General Specifications:

Items	Specifications
Main unit	2 line x 20 character LCD with backlight Working temperature: -25--60℃
	Mini thermal printer with 24 line character output
	4x4+2 pushbutton keypad
	RS-485 interface for networking
Ultrasonic Transducer options	TS-1: small size transducer (magnetic) for pipe size: DN15-100mm, liquid temperature ≤110℃
	TM-1:medium size transducer (magnetic) for pipe size:DN50-1000mm, liquid temperature ≤110℃
	TL-1: Large size transducer (magnetic) for pipe size: DN300-6000mm, liquid temperature ≤110℃
Temperature Transducer	Three wire pt100 platinic resistance, measuring range :-50 -----180℃ measuring accuracy:100℃, 0.8℃ , the temperature difference ≤0.1℃
Liquid types	Water, sea water, industrial sewage, acid and alkali liquid, various oils etc. liquid which can transmit sound wave.
Flow velocity range	0- ±30m/s
Accuracy	Better than ±1%
Power Supply	Built-in rechargeable Ni-MH battery (for 20 hours operation) or AC 220V
Power Consumption	1.5W
Charging	Intelligent charging with AC 220V; After charging sufficiently, it automatically stop and display green light
Weight	Net weight: 2.5kg (main unit)
Remarks	With a high strength carrying case suitable for normal and harsh environment

Portable Ultrasonic Flowmeter

Type：TUF-2000P

Main Features:

Features	Description
High Accuracy measuring	Linearity: better than 0.5%, Repeatability: better than 0.2%, Accuracy: better than ±1%
Non-intrusive measuring	Non-intrusive, clamp-on transducer, no pressure drop, no pipe disturbance.
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
Chinese & English menu	Chinese & English display, easy to operate.
Large capacity battery	Built-in rechargeable Ni-MH rechargeable battery, provide over 20 hours of continuous operation
Built-in printer	Built-in mini thermal printer with instant and timing print function
Built-in data logger	Uplink over 20 measuring data to computer or internet

Model Selection:

Standard configuration:

Main Unit Volume:225X180X67	Medium transducer TM-1	Ultrasonic signal Cable	Power cord	Carrying case
Stretcher	Tape ruler	Thermal print paper	User Manual	Ultrasonic coupling agent

Optional Transducer:

Small size transducer TS-2(Magnetic) DN15～DN100mm -40℃～110℃	Medium size transducer TM-1(Magnetic) DN50～DN1000mm -40℃～110℃	Large size transducer TL-1(Magnetic) DN300～DN6000mm -40℃～110℃
High-temperature small size transducer HTS-1 DN15～DN100mm -40℃～160℃	High-temperature medium size transducer HTM-1 DN50～DN1000mm -40℃～160℃	

Other optional configuration

Ultrasonic thickness meter	lengthen signal cable	Lengthen stretcher	Thermal print paper

General Specifications:

Items	Specifications
Main unit	2 line x 20 character LCD with backlight Working temperature: -25--60℃
	Mini thermal printer with 24 line character output
	4x4+2 pushbutton keypad
	RS-485 interface for networking
Transducer options	TS-1: small size transducer (magnetic) for pipe size: DN15-100mm, liquid temperature ≤110℃
	TM-1:medium size transducer (magnetic) for pipe size:DN50-1000mm, liquid temperature ≤110℃
	TL-1: Large size transducer (magnetic) for pipe size: DN300-6000mm, liquid temperature ≤110℃
Liquid types	Water, sea water, industrial sewage, acid and alkali liquid, various oils etc. liquid which can transmit sound wave.
Flow velocity range	0- ±30m/s
Accuracy	Better than ±1%
Power Supply	Built-in rechargeable Ni-MH battery (for 20 hours operation) or AC 220V
Power Consumption	1.5W
Charging	Intelligent charging with AC 220V; After charging sufficiently, it automatically stop and display green light
Weight	Net weight: 2.5kg (main unit)
Remarks	With a high strength carrying case suitable for normal and harsh environment

Handheld Ultrasonic Flowmeter

Type：TUF-2000H

Main Features:

Features	Description
High Accuracy measuring	Accuracy: ±1%, linearity: 0.5%, repeatability: 0.2%
Non-intrusive measuring	Non-intrusive, clamp-on transducer, no pressure drop, no pipe disturbance.
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
Light weight	Size: 210×90×30mm, weight: only 0.5kg
Large capacity battery	Built-in rechargeable Ni-MH battery, provide over 12 hours of continuous operation
Large LCD display	Display instantaneous flow, accumulated flow (positive, negative and net), velocity, working status etc.
Built-in data logger	Built-in 24K data logger, store over 2000 lines measuring data

Standard configuration:

Main Unit	Medium transducer TM-1	Ultrasonic signal Cable	Power Cord	Carrying case
Stretcher	Tape ruler	Data line	User Manual	Ultrasonic coupling agent

Optional Transducer:

Small size transducer TS-2(Magnetic) DN15～DN100mm -40℃～110℃	Medium size transducer TM-1(Magnetic) DN50～DN1000mm -40℃～110℃	Large size transducer TL-1(Magnetic) DN300～DN6000mm -40℃～110℃
High-temperature small size transducer HTS-1 DN15～DN100mm -40℃～160℃	High-temperature medium size transducer HTM-1 DN50～DN1000mm -40℃～160℃	

Other optional configuration

Ultrasonic thickness meter	lengthen cable	Lengthen stretcher

General Specification:

Items	Specification
Linearity	0.5%
Repeatability	0.2%
Accuracy	Better than ±1% for velocity above 0.2m/s
Response Time	0-999 second, user-configurable
Flow Range	±32m/s
Measuring Pipe Size	15mm-6000mm
Units	English (U.S.) or metric
Totalizer	7-digit totalizer for net, positive and negative flow respectively
Liquid Types	Any single uniform liquid which can transmit ultrasonic
Security	Setup values Modification Lockout. Access code needs unlocking
Display	4×16 character
Communication Interface	RS-232 interface. 75-57600bps, compatible with Fuji ultrasonic flowmeter and other UFM on enquiry.
Transducers	Model M1 for standard, other 4 models for optional
Transducer Cable	Standard 5m x2 or can be extended to 10m x2
Power Supply	3 AAA built-in Ni-MH batteries (for over 12 hours of operation). 100V-240VAC adapter
Data Logger	Built-in data logger can store over 2000 lines of data
Manual Totalizer	7 digit, calibrating by key
Housing Material	Flaming retarding ABS
Size	210×90×30mm
Handset Weight	500g(1.2 lbs) with batteries

Basic Type Unified Fixed Ultrasonic Flowmeter

Type：TUF-2000B

Main Features:

Features	Description
High accuracy	Linearity: better than0.5%, Repeatability: better than 0.2%, Accuracy : better than ±1%
Wide measuring range	Several types transducer for selection, pipe size from DN15mm to DN6000mm
High Protection Grade	Protection Grade of primary meter: IP68, can work in 2m under water
Easy to operate	Browse data with magnetic stick on primary meter or reset parameter on secondary meter
Multi-display	Integrate signal detecting and flow measuring on primary meter, display accumulated/instantaneous flow, velocity in circle; secondary meter can also display over 100 menus.
Far transmission distance	Connect primary and secondary meter through RS-485 interface, normal cable replaces special cable, transmission distance up to 1000m.

Optional Secondary meter

Wall-mount meter	Panel-mount meter	Explosion-proof meter

(TUF-2000FW) Size: 178×165×55mm	(TUF-2000FS) Panel size：152mm×76mm	(TUF-2000FD) Explosive-proof Grade: DⅡBT4， Size: 298×298×110mm

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
	TS-1(Small Size)	TUF-2000BNB1	DN15-100mm	-0℃～90℃	±1%
	TM-1(Medium Size)	TUF-2000BNB2	DN50-1000mm		
Clamp-on Transducer	TL-1(Large Size)	TUF-2000BNB3	DN300-6000mm		
	THS-1(Small Size)	TUF-2000BNB4	DN15-100mm	0℃～160℃	
High-temperature Clamp-on Transducer	THM-1(Medium Size)	TUF-2000BNB5	DN300-1000mm		
	TC-1(Standard)	TUF-2000BNC1	DN80-6000mm	-40℃～160℃	
Insertion Transducer	TLC-2(Lengthen)	TUF-2000BNC2			
	Pipe section	TUF-2000BNG	DN15-1000mm	-40℃～160℃	±0.5%
Pipe section					
Power Supply	Primary meter: 8-36VDC, Secondary meter: AC220V or DC24V				
Input	None				
Output	None				
Communication Protocols	Compatible with METER-BUS protocol, MODBUS protocol, Fuji extended protocol and general water meter protocol.				

Functional Type Unified Fixed Ultrasonic Flowmeter

Type：Model: TUF-2000F

Main Features:

Features	Description
High accuracy	Linearity: better than 0.5%, Repeatability: better than 0.2%, Accuracy : better than ±1%
Wide measuring range	Several types transducer for selection, pipe size from DN15mm to DN6000mm
High Protection Grade	Protection Grade of primary meter: IP68, can work in 2 m of water
Easy to operate	Browse data with magnetic stick on primary meter or reset parameter on secondary meter
Multi-display	Integrate signal detecting and flow measuring on primary meter, display accumulated/instantaneous flow, velocity in circle; secondary meter can also display over 100 menus.
Far transmission distance	Connect primary and secondary meter through RS-485 interface, normal cable replaces special cable, transmission distance up to 1000m.

Optional Secondary meter

Wall-mount meter (TUF-2000FW) Size: 178×165×55mm	Panel-mount meter (TUF-2000FS) Panel size：152mm×76mm	Explosion-proof meter (TUF-2000FD) Explosive-proof Grade: DⅡBT4， Size: 298×298×110mm

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
 Clamp-on Transducer	TS-1(Small Size)	TUF-2000SNB1	DN15-100mm	-30℃～90℃	±1%
	TM-1(Medium Size)	TUF-2000SNB2	DN50-1000mm		
	TL-1(Large Size)	TUF-2000SNB3	DN300-6000mm		
 High-temp. Clamp-on Transducer	THS-1(Small Size)	TUF-2000SNB4	DN15-100mm	-30℃～160℃	
	THM-1(Medium Size)	TUF-2000SNB5	DN300-1000mm		
 Insertion Transducer	TC-1(Standard)	TUF-2000SNC1	DN80-6000mm	-40℃～160℃	
	TLC-2(Lengthen)	TUF-2000SNC2			
 Prover Section Transducer	Prover Section Transducer	TUF-2000SNG	DN15-1000mm	-40℃～160℃	±0.5%
Power Supply	Primary meter: 8-36VDC, Secondary meter: AC220V or DC24V				
Input	3 channel 4 -20mA analog input, two channels Tri-wire resistance signal input (PT100)				
Output	Isolation RS-485 output, 2 channel isolation OCT output; 1 channel isolation 4-20mA output (two-wire system)				
Communication Protocols	Compatible with METER-BUS, MODBUS, Fuji extended protocol and general water meter protocol.				

Separate Fixed Ultrasonic Flowmeter

Type：TUF-2000S

Main Features:

Features	Description
High Accuracy measuring	Linearity: better than 0.5%, Repeatability: better than 0.2%, Accuracy: better than ±1%
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
Chinese & English menu	Different version UFM can support Chinese or English display, easy to operate.
High Reliability	Adopt low voltage, multi-pulse technology to improve accuracy, useful life and reliability.
Strong Anti-interference	Dual-balance signal differential receiver/driver circuit to avoid interference of converter, TV tower, high voltage line etc.
Powerful Recording Function	Automatically record the following data: 1. The totalizer data of the last 512 days/128 months/10 years 2. The time and corresponding flow rate of the last 64 times of power on and off events 3. The working status of the last 32 days

Optional Main unit:

Wall-mount meter (TUF-2000SW) Size: 178×165×55mm	Panel-mount meter (TUF-2000SS) Panel size：152mm×76mm	Explosion-proof meter (TUF-2000SD) Explosive-proof Grade: DⅡBT4， Size: 298×298×110mm

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
 Clamp-on Transducer	TS-1(Small Size)	TUF-2000SNB1	DN15-100mm	-30℃～90℃	±1%
	TM-1(Medium Size)	TUF-2000SNB2	DN50-1000mm		
	TL-1(Large Size)	TUF-2000SNB3	DN300-6000mm		
 High-temperature Clamp-on Transducer	THS-1(Small Size)	TUF-2000SNB4	DN15-100mm	-30℃～160℃	
	THM-1(Medium Size)	TUF-2000SNB5	DN300-1000mm		
 Insertion Transducer	TC-1(Standard)	TUF-2000SNC1	DN80-6000mm	-40℃～160℃	
	TLC-2(Lengthen)	TUF-2000SNC2			
 Prover section	Prover section	TUF-2000SNG	DN15-1000mm	-40℃～160℃	±0.5%
Power Supply	DC8-36V or AC85-264V				
Input	3 channel 4-20mA analog input				
Output	Isolation RS-485 output, 2 channel isolation OCT output: 1 channel isolation 4-20mA output (two-wire system)				
Communication Protocols	Compatible with METER-BUS, MODBUS, Fuji extended protocol and general water meter protocol.				

Ultrasonic Industrial Water Meter

Type：TUF-2000W

Main Features:

Feature	Description
Multi-way power supply	3.6V Li battery (for 6 years of operation); or 8-36VDC power supply, when cut off the power supply, the battery will continue to work.
High Protection Grade	Protection grade up to IP68, can work in 2 m of water
Design of general application	Length of pipe design bases on general water meter, easy to replace.
Firm construction	Casting technology of pipe section, no leaks, no pressure drop, and no moving parts.
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
humanization design	Simplicity of operator with magnetic stick; Self-diagnosis of error; Graphical error display; Accumulated flow/heat (positive and negative), instantaneous flow, velocity display in circle.

General Specification:

<table>
<tr><th colspan="2">Optional Transducer</th><th>Model</th><th>Measuring Range</th><th>Liquid Temperature</th><th>Accuracy</th></tr>
<tr><td rowspan="2">
Insertion Transducer</td><td>TC-1(Standard)</td><td>TUF-2000WNC1</td><td rowspan="2">DN80-6000mm</td><td rowspan="3">-40℃～160℃</td><td rowspan="3">±2%</td></tr>
<tr><td>TLC-2(Lengthen)</td><td>TUF-2000WNC2</td></tr>
<tr><td>
Prover Section</td><td>Prover Section</td><td>TUF-2000WNG</td><td>DN15-1000mm</td></tr>
<tr><td colspan="2">Power Supply</td><td colspan="4">3.6V Li battery (for 6 years of operation); or 8-36VDC power supply</td></tr>
<tr><td colspan="2">Input</td><td colspan="4">4-20mA, PT-100 resistance signal input</td></tr>
<tr><td colspan="2">Output</td><td colspan="4">RS-485, OCT, 4-20mA (optional)</td></tr>
<tr><td colspan="2">Communication Protocols</td><td colspan="4">MODBUS/METER-BUS protocol, General water meter protocol.</td></tr>
</table>

Ultrasonic Flow Module

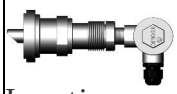
Type：TUF-2000M

Main Features:

Features	Description
High accuracy	Linearity: better than 0.5%, Repeatability: better than 0.2%, Accuracy: better than ±1%
Wide measuring range	Several types transducer for selection, pipe size from DN15mm to DN6000mm
Far transmission distance	Connecting module and secondary meter through RS-485 interface, transmission distance up to 1000m
Powerful Functions	**Current output**: 4-20mA, one channel, can be used for flow/heat transmitter; **OCT output**: two channels, can be used for flow /heat switch; **Current input**: 4-20mA, three channels, can be used for data collector; **Tri-wire resistance signal input (PT100)**: two channels, can be used for calorimeter.
Wide Application	Its unique features, particularly low cost, small size, high performance, local display, make it the ideal choice for industrial automation, processing control, flow meter networking, composing multi-channel, high accuracy flow meter.

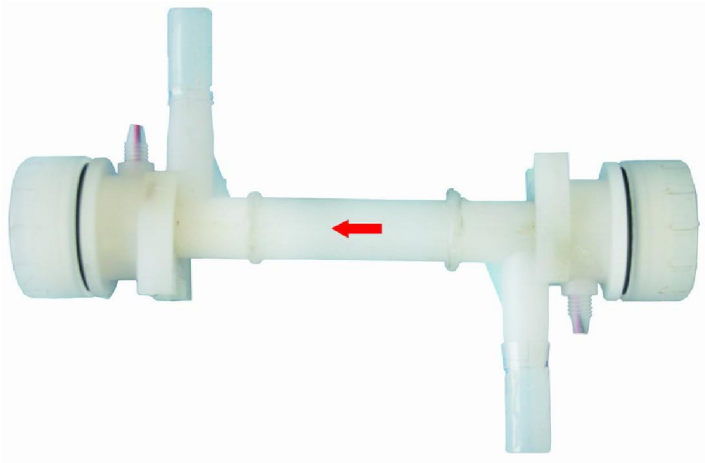
Notice:
If you need the modules to measure heat, please indicate when place an order.

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
Clamp-on Transducer	TS-1(Small Size)	TUF-2000MNB1	DN15-100mm	-300℃～90℃	±1%
	TM-1(Medium Size)	TUF-2000MNB2	DN50-1000mm		
	TL-1(Large Size)	TUF-2000MNB3	DN300-6000mm		
High-temperature Clamp-on Transducer	THS-1(Small Size)	TUF-2000MNB4	DN15-100mm	-30℃～160℃	
	THM-1(Medium Size)	TUF-2000MNB5	DN50-1000mm		
 Insertion Transducer	TC-1(Standard)	TUF-2000MNC1	DN80-6000mm	-40℃～160℃	
	TLC-2(Lengthen)	TUF-2000MNC2			
Prover section Transducer	Prover section	TUF-2000MNG	DN15-1000mm	-40℃～160℃	±0.5%
Power Supply	Primary meter: 8-36V DC or 10-30V AC				
Input	3 channel 4-20m Analog input， 2 channel Tri-wire resistance signal input (PT100)				
Output	Isolation RS-485 output,b2 channel isolation OCT, I channel isolation 4-20mA output (two-wire system)				
Communication Protocols	Compatible with MODBUS, METER-BUS protocol, Fuji extended protocol and general water meter protocol.				

Ultra-clean Ultrasonic Flow meter TUF-2000C

Type: TUF-2000C



Main Features:

Features	Description
High Accuracy measuring	Accuracy: better than ±1%
Slow velocity measuring	Minimum velocity:10mL/min
High viscosity measuring	Viscosity of liquid:0-40cSt
Material	The top of the transducer which contacts the liquid directly is made of special PFA and other parts is made of PP. Simple construction, no moving part and no residues, can measure corrosion liquid.
Easy installation	Main unit and transducer are installed separately, inlet and outlet are standard size for easy installation
Wide Application	Can measure: 1 Pure water and Ultra-pure Water in manufacturing of semi-conductors 2 chemical or mechanical abrasive slurry 3 dosing 4 strongly corrosion liquid 5 slow velocity liquid

Notice: Currently supplied size is DN6mm; material of transducer can be changed as your request.

General Specification:

Feature	Description
Accuracy	0-1.6L/min, ±0.017L/min 1.7-9L/min, ±1%
Measuring range	1.7-9L/min
Liquid Temperature	10-60℃
Liquid pressure	0-0.5MPa
Liquid Sound speed	1000-2200m/s
Viscosity of liquid	0-40cSt
Pressure lost factor	0.5
Signal cable	5m, can be lengthened to 100m
Connect pipe size	3/8''
Protection grade	IP65
Signal output	Programmable 4-20mA current output, impedance 0-1K, accuracy: 0.1%
Signal input	3 channel 4-20mA input, accuracy: 0.1%
Data interface	Isolation RS485, compatible with MODBUS, METER-BUS protocol
Batch controller	Programmable batch controller, 10 trig signal sources include external input signal and MODBUS instruction
Power	Isolated 8-36VDC or 10-30VAC

Optional Main unit:

Wall-mount meter (TUF-2000SW) Size: 178×165×55mm	Panel-mount meter (TUF-2000SS) Panel size：152mm×76mm	Explosion-proof meter (TUF-2000SD) Explosive-proof Grade: DⅡBT4， Size: 298×298×110mm

Unified Ultrasonic Calorimeter

Type：TUC-2000F

Main Features:

Feature	Description
Far Transmission distance and easy networking	Connect primary and secondary meter through RS-485 interface, normal cable replaces special cable, transmission distance up to 1000m. convenient and quick network setup Solve the problems of high cost of special cable, poor anti-interference, short transmission distance etc.
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
Chinese or English menu	Different version UFM can support Chinese or English display, easy to operate.
High Reliability	Adopt low voltage, multi-pulse technology to improve accuracy, useful life and reliability.
Powerful Recording Function	1. Automatically record the day totalizer data of the last 64 days and month totalizer data of the last 32 months (2 years), add day/month/year record; 2. Read of the day/month/year totalizer data with MODBUS protocol.

Optional Secondary meter (For single point measuring, long distance display and parameter setup)

Wall-mount meter (TUF-2000SW) Size: 178×165×55mm	Panel-mount meter (TUF-2000SS) Panel size：152mm×76mm	Explosion-proof meter (TUF-2000SD) Explosive-proof Grade: DⅡBT4， Size: 285×265×90mm

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
	TS-1(Small Size)	TUC-2000FNB1	DN15-100mm	-30℃～90℃	±2%
	TM-1 (Medium Size)	TUC-2000FNB2	DN50-1000mm		
Clamp-on Transducer	TL-1(Large Size)	TUC-2000FNB3	DN300-6000mm		
	THS-1 (Small Size)	TUC-2000FNB4	DN15-100mm	-30℃～160℃	
High-temperature Clamp-on Transducer	THM-1 (Medium Size)	TUC-2000FNB5	DN300-1000mm		
	TC-1(Standard)	TUC-2000FNC1	DN80-6000mm	-40℃～160℃	
Insertion Transducer	TLC-2(Lengthen)	TUC-2000FNC2			
	Prover section	TUC-2000FNG	DN15-1000mm (see appendix 2)	-40℃～160℃	
Prover section					
Power Supply	Primary meter: 8-36VDC, Secondary meter: AC220V or DC24V				
Input	3 channel 4-20mA analog input, 2 channel Tri-wire resistance signal input (PT100)				
Output	Isolation RS-232/RS-485 output, 2 channel isolation OCT output 1 channel isolation 4-20mA output (without power supply)				
Communication Protocols	Compatible with MODBUS, METER-BUS protocol, Fuji extended protocol and general water meter protocol.				

Separate Ultrasonic Calorimeter

Type：TUC-2000S

Main Features:

Features	Description
Wide measuring range	Several types transducer for selection, measuring pipe size from DN15mm to DN6000mm
Plentiful contents display	Display instantaneous flow/heat, velocity, accumulated flow/heat etc.
High Reliability	Adopt low voltage, multi-pulse technology to improve accuracy, useful life and reliability.
Powerful Recording Function	1. Automatically record the totalizer data of the last 128 days/64 months/5 years 2. Read of the totalizer data of day/month/year with MODBUS protocol.
Timing print function	Timing print of 22 programming contents, automatically record or timing print data.
Programmable quantitative controller	Built-in programmable quantitative controller, start with outside signal input or MODBUS protocol.

Optional Main unit:

Wall-mount meter (TUC-2000SW) Size: 178×165×55mm	Panel-mount meter (TUC-2000SS) Panel size：152mm×76mm	Explosion-proof meter (TUC-2000SD) Explosive-proof Grade: DⅡBT4， Size: 285×265×90mm

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
	TS-1(Small Size)	TUC-2000SNB1	DN15-100mm	-30℃～90℃	±2%
	TM-1(Medium Size)	TUC-2000SNB2	DN50-1000mm		
Clamp-on Transducer	TL-1(Large Size)	TUC-2000SNB3	DN300-6000mm		
	THS-1(Small Size)	TUC-2000SNB4	DN15-100mm	-30℃～160℃	
High-temperature Clamp-on Transducer	THM-1(Medium Size)	TUC-2000SNB5	DN300-1000mm		
	TC-1(Standard)	TUC-2000SNC1	DN80-6000mm	-40℃～160℃	
Insertion Transducer	TLC-2(Lengthen)	TUC-2000SNC2			
	Prover section	TUC-2000SNG	DN15-1000mm (see appendix 2)	-40℃～160℃	
Prover section					
Power Supply	8-36VDC or AC220V				
Input	3 channel 4-20mA analog input, 2 channel tri-wire resistance signal input (PT100)				
Output	Isolation RS-232/RS-485 output, 2 channel isolation OCT output, 1 channel isolation 4-20mA output (two-wire ststem)				
Communication Protocols	Compatible with MODBUS, METER-BUS protocol, Fuji extended protocol and general water meter protocol.				

Battery-powered Ultrasonic Calorimeter

Type：TUC-2000W

Main Features:

Features	Description
Multi-way power supply	3.6V Li battery (for 6 years of operation); two-wire system 4-20mA output; RS-232 output and RS-485 output which can work without battery
Plentiful contents display	The accumulated flow/heat, instantaneous flow/heat, display temperature of water supply/return, current temperature-difference, error working time, working status, date, time in circle
High Protection Grade	Protection grade up to IP68, can work in 2m of water
Firm construction	Casting technology of pipe section, no leaks, no pressure drop, no moving parts.
Powerful Recording Function	Automatically record the following data: 1. The totalizer (flow and heat) data of the last 128 days/64 months/5 years 2. The time and corresponding flow meter of the last 64 times of power on and off events 3. The working status of the last 64 days

General Specification:

<table>
<tr><th colspan="2">Optional Transducer</th><th>Model</th><th>Measuring Range</th><th>Liquid Temperature</th><th>Accuracy</th></tr>
<tr><td rowspan="2">
Insertion Transducer</td><td>TC-1(Standard)</td><td>TUC-2000WNC1</td><td rowspan="2">DN80-6000mm</td><td rowspan="3">-40℃～160℃</td><td rowspan="3">±2%</td></tr>
<tr><td>TLC-2(Lengthen)</td><td>TUC-2000WNC2</td></tr>
<tr><td>
Prover Section</td><td>Prover Section</td><td>TUC-2000WNG</td><td>DN15-1000mm
(see appendix 2)</td></tr>
<tr><td colspan="2">Power Supply</td><td colspan="4">3.6V Li battery (for 6 years of operation); two-wire system 4-20mA output;
RS-232 output and RS-485 output which can work without battery</td></tr>
<tr><td colspan="2">Input</td><td colspan="4">None</td></tr>
<tr><td colspan="2">Output</td><td colspan="4">Non-isolation RS-232, Outside-powered isolation RS-485, 1 channel non-isolation 4-20mA (optional)</td></tr>
<tr><td colspan="2">Communication Protocols</td><td colspan="4">MODBUS/METER-BUS protocol, General water meter protocol.</td></tr>
</table>

Ultrasonic Flow Module

Type：TUC-2000M

Main Features:

Features	Description
High accuracy	Linearity: better than 0.5%, Repeatability: better than 0.2%, Accuracy: better than ±1%
Wide measuring range	Several types transducer for selection, pipe size from DN15mm to DN6000mm
Far transmission distance	Connecting module and secondary meter through RS-485 interface, transmission distance up to 1000m
Powerful Functions	**Current output**: 4-20mA, one channel, can be used for flow/heat transmitter; **OCT output**: two channels, can be used for flow /heat switch; **Current input**: 4-20mA, three channels, can be used for data collector; **Tri-wire resistance signal input (PT100)**: two channels, can be used for calorimeter.
Wide Application	Its unique features, particularly low cost, small size, high performance, local display, make it the ideal choice for industrial automation, processing control, flow meter networking, composing multi-channel, high accuracy flow meter.

General Specification:

Optional Transducer		Model	Measuring Range	Liquid Temperature	Accuracy
Clamp-on Transducer	TS-1 (Small Size)	TUC-2000MNB1	DN15-100mm	-0℃～90℃	±1%
	TM-1 (Medium Size)	TUC-2000MNB2	DN50-1000mm		
	TL-1(Large Size)	TUC-2000MNB3	DN300-6000mm		
High-temperature Clamp-on Transducer	THS-1 (Small Size)	TUC-2000MNB4	DN15-100mm	0℃～160℃	±0.5%
	THM-1 (Medium Size)	TUC-2000MNB5	DN300-1000mm		
Insertion Transducer	TC-1(Standard)	TUC-2000MNC1	DN80-6000mm	-40℃～ 160℃	
	TLC-2(Lengthen)	TUC-2000MNC2			
Prover section	Prover section	TUC-2000MNG	DN15-1000mm	-40℃～ 160℃	

Power Supply	Primary meter: 8-36VDC or 10-30V AC
Input	3 channel 4-20mA analog input， 2 channel Tri-wire resistance signal input (PT100)
Output	Isolation RS-485 output,b2 channel isolation OCT, I channel isolation 4-20mA output (two-wire system)
Communication Protocols	Compatible with MODBUS, METER-BUS protocol, Fuji extended protocol and general water meter protocol.

Technical Parameter for Ultrasonic Flew Energy meter

<table>
<tr><th>Item</th><th colspan="4">Performance and Parameter</th></tr>
<tr><td rowspan="15">Main Unit</td><td>Principle</td><td>transit-time principle,
4 bite floating-point arithmetic</td><td rowspan="2">Measurement Period</td><td rowspan="2">0.5s(battery-powered supply can adjust 0.5s-49s)
128 set of data each time</td></tr>
<tr><td>Accuracy</td><td>Flew: over ±1%(battery-powered supply over ±2%)，Heat: over ±2%，Repeatability: over 0.2%</td></tr>
<tr><td>Display</td><td colspan="3">2 line x 20 character LCD with backlight</td></tr>
<tr><td>Operation</td><td colspan="3">Support 4 key / 16 key light touch keyboard and the Simulation keyboard software</td></tr>
<tr><td rowspan="4">Signal Output</td><td colspan="3">Electric Current output:4—20Am or 0—20Am, electric resistance 0—1 K, accuracy is 0.1%</td></tr>
<tr><td colspan="3">Pulse Signal: Plus or minus accumulated and heat pulses,, two channel of OCT output (one of the pulse width is 6-1000ms, default is 200ms)</td></tr>
<tr><td colspan="3">Frequency Signal : Between 1-9999Hz, OCT output</td></tr>
<tr><td colspan="3">Alarm Signal: Two channel OCT output, 20 kinds of signal selected</td></tr>
<tr><td rowspan="2">Signal Input</td><td colspan="3">Input three channel 4—20Am Electric Current signal , accuracy ±0.1%</td></tr>
<tr><td colspan="3">Connect three thread PT100, also can finish the energy measurement</td></tr>
<tr><td>Data interface</td><td colspan="3">Insulate RS485 serial interface, upgrade the flew meter software by computer, support the MODBUS, METER-BUS etc.</td></tr>
<tr><td rowspan="3">Other Function</td><td colspan="3">Automatically remember the previous flew/energy data of 512 days, 128 months and 10 years</td></tr>
<tr><td colspan="3">Automatically remember the previous working condition and check it</td></tr>
<tr><td colspan="3">Automatically remember the previous 32 times power on/off time and flow rate</td></tr>
<tr><td>Special Cable</td><td colspan="4">Make twisted-pair cable, generally, the length under 50 meters;Select the RS485 communication. The transmission distance can over 1000m.</td></tr>
<tr><td rowspan="3">Pipe Condition</td><td>Pipe Material</td><td colspan="3">Steel, Stainless steel, Cast iron, Copper, Cement pipe, PVC, Aluminum, Glass steel product, liner is allowed.</td></tr>
<tr><td>Pipe Diameter</td><td colspan="3">15---6000mm</td></tr>
<tr><td>Straight length pipe</td><td colspan="3">Transducer installation should be satisfied: upstream10D, downstream 5D, 30D from the pump.</td></tr>
</table>

<table>
<tr><td rowspan="5">Measuring Medium</td><td>Type of Liquid</td><td colspan="4">Water (hot water, chilled water, city water, sea water, waste water, etc.); Sewage with small particle content; Oil (crude oil, lubricating oil, diesel oil, fuel oil, etc.); Chemicals (alcohol, acids, etc.); Plant effluent; Beverage, liquid food; Ultra-pure liquids; Solvents and other liquids</td></tr>
<tr><td>Temperature</td><td colspan="4">Standard Transducer: -30--90℃; High-temperature transducer: -30--160℃</td></tr>
<tr><td>Turbidity</td><td colspan="4">10000ppm and less than bubble</td></tr>
<tr><td>Flow rate</td><td colspan="4">0--±30m/s</td></tr>
<tr><td>Flow Direction</td><td colspan="4">Measuring two (plus-minis) direction of flow rate and energy</td></tr>
<tr><td rowspan="4">Working Environment</td><td rowspan="2">Temperature</td><td colspan="4">Main Unit: -20--60℃</td></tr>
<tr><td colspan="4">Flow transducer: -40--160℃;
Temperature transducer: according to the customer’s demands.</td></tr>
<tr><td rowspan="2">Humidity</td><td colspan="4">Main Unit: 85% RH</td></tr>
<tr><td colspan="4">Flow transducer: Work under water, water depth ≤3M</td></tr>
<tr><td rowspan="2">Power Supply</td><td>Fixed-basic flew meter</td><td>Fixed- Functional Flew/Energy Meter</td><td>Flew/Energy Model</td><td>Integrated flew/energy meter</td><td>Battery –powered supply flew/energy meter</td></tr>
<tr><td>24VDC</td><td>8-36VDC
85-264VAC</td><td>8-36VDC
10-30VAC</td><td>24VDC
85-264VAC</td><td>3.6 Li-ion
8-36VDC</td></tr>
<tr><td>Power Consumption</td><td colspan="5">1.5W</td></tr>
</table>

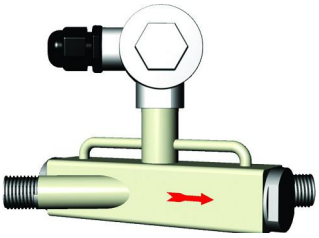
Optional Transducer for fixed Ultrasonic Flowmeter

(TUF-2000B TUF-2000F TUF-2000S)

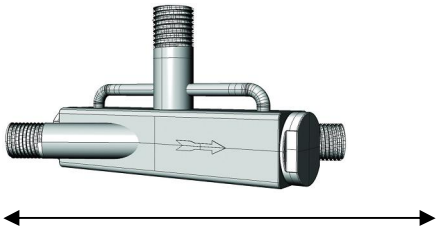
Optional Transducer		Measuring Range	Liquid Temperature	Accuracy	Features
Clamp-on Transducer	TS-1 (Small Size)	DN15-100mm	-30℃～90℃	±1%	1 No pipe disturbance，no pressure drop; 2 easy installed by user; 3 low price, not affected by pipe size; 4 apply to better install conditions
	TM-1 (Medium Size)	DN50-1000mm			
	TL-1 (Large Size)	DN300-6000mm			
High-temperature Clamp-on Transducer	THS-1 (Small Size)	DN15-100mm	-30℃～160℃		
	THM-1 (Medium Size)	DN50-1000mm			
Insertion Transducer	TC-1 (Standard)	DN80-6000mm	-40℃～160℃	±1%	1 No pipe disturbance, no pressure drop; 2 installed by trained user using special tool; 3 higher price,not affected by pipe size; 4 better signal receiving, stable long-term operation
	TLC-2 (Lengthen)				
Prover section Transducer	Prover section	DN15-1000mm	-40℃～160℃	±0.5%	1 to install need cut pipe and stop flow, no pressure drop; 2 easy install by user; 3 larger size of pipe, higher of price; 4 high accuracy, stable long term-operation

Pipe Segment Ultrasonic Flow Sensor Specifications

Pipe Segment Ultrasonic sensor（DN15-DN40mm）



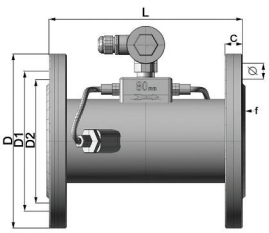
Unit: mm Nominal pressure：2.5MPa



Nominal Size DN（mm）	Length（mm）	Connecting thread
15	165	G1/2
20	195	G3/4
25	225	G1
32	230	G1 1/4
40	245	G1 1/2

Standard Pipe Segment Ultrasonic sensor（DN15-DN40mm）

Unit: mm Nominal pressure：2.5MPa



Nominal Size DN（mm）	Length L	Flange Diameter D	Bolt Hole Center D1	Bolt hole *Quantity Φ * n	Sealing surface		Flange thickness C
					D2	f	
50	280	165	125	18*4	99	3	20
65	200	185	145	18*4	118	3	20
80	225	200	160	18*4	132	3	20
100	250	220	180	18*8	156	3	22
125	275	250	210	18*8	184	3	22
150	300	285	240	22*8	211	3	24
200	350	340	295	22*12	266	3	24
250	450	405	355	26*12	319	3	26
300	500	460	410	26*12	370	4	28
350	550	520	470	26*12	429	4	30
400	600	580	525	18*16	480	4	32
450	700	640	585	30*20	548	4	34
500	800	715	650	33*20	609	4	36
600	1000	840	770	36*20	720	5	38
700	1100	910	840	36*24	794	5	40
800	1200	1025	950	39*24	901	5	42
900	1200	1125	1050	39*28	1001	5	44
1000	1400	1255	1170	42*28	1112	5	46